



# First records of the genus *Allotilla* Schuster, 1949 (Hymenoptera, Mutillidae) in Brazil

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**Abstract:** The monotypic genus *Allotilla* Schuster, 1949, previously known only from the Chaco biogeographic province of Argentina and Paraguay, is recorded for the first time in Brazil. These new records extend the known range of the genus to a new biogeographic dominion.

**Key words:** *Araucaria* Forest province; Chaco province; Cerrado province, Sphaerophthalminae; velvet ant

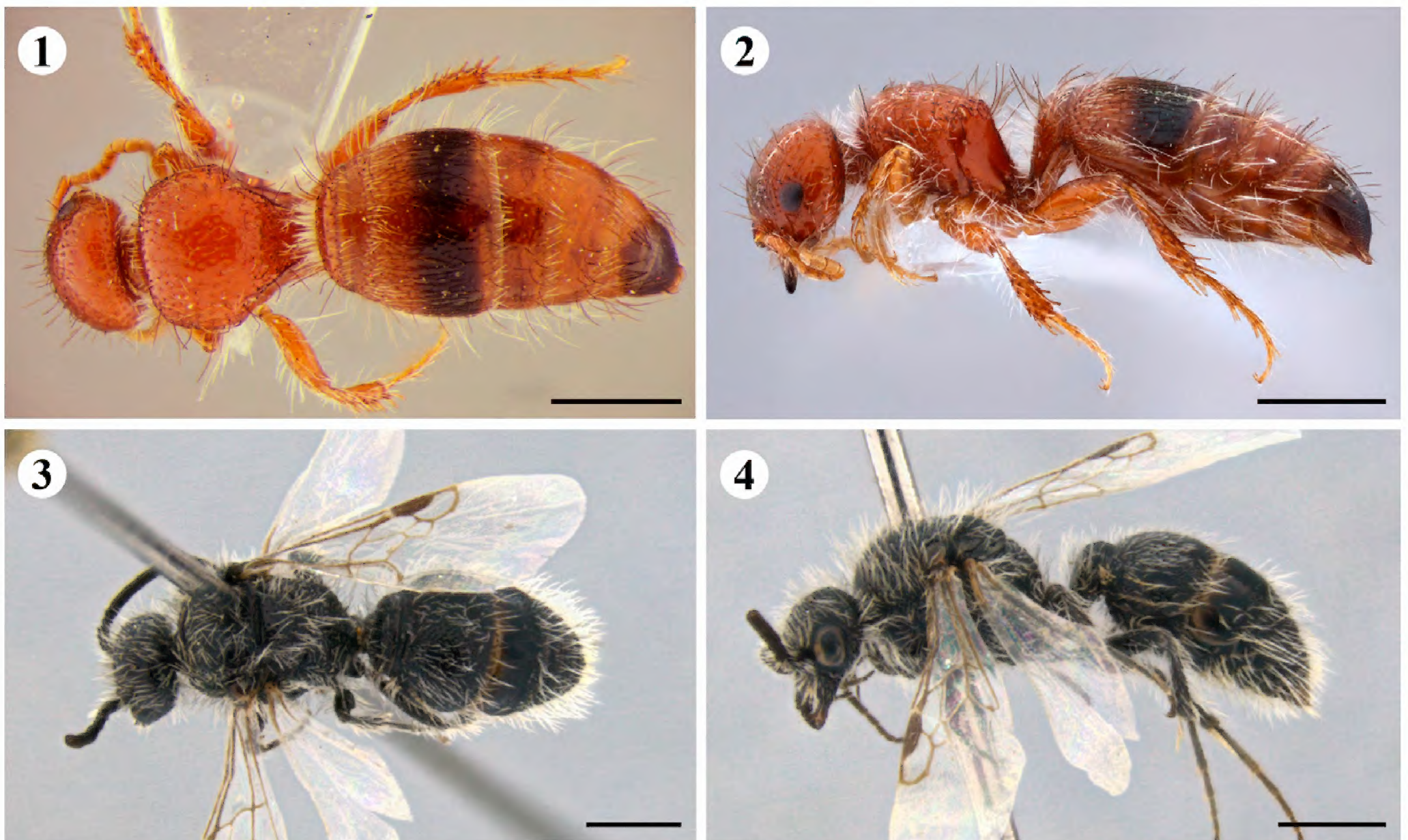
The genus *Allotilla* Schuster, 1949 was erected to include a single new species, *A. gibbosa* Schuster, 1949, which was described based on a single male from Córdoba, Argentina (Schuster 1949). The female was later described by Quintero and Cambra (2006) based on five specimens from three different localities in the Boquerón department, Paraguay. Several males from Boquerón and Presidente Hayes departments were also studied, which were the basis for illustrations of certain structures of the females and male genitalia. Quintero and Cambra (2006) also provided a morphology-based phylogenetic analysis to assess the relationship and position of *Allotilla* with other Neotropical mutillid genera. Finally, the same authors presented several hypotheses regarding the biology and origin of the genus based on its apparent phylogenetic proximity to the nocturnal sphaerophthalmine genera *Limaytilla* Casal, 1964 and *Scaptodactyla* Burmeister, 1854.

To date, the known range of the genus *Allotilla* was restricted to the Chaco biogeographic province (*sensu* Morrone 2014) of Argentina and Paraguay. Herein, we present the first records of the genus in Brazil and

expand its geographical distribution to two additional biogeographic provinces.

We have studied 14 specimens belonging to the genus *Allotilla*, a female and 13 males, which were identified as *Allotilla* cf. *gibbosa* Schuster, 1949 (Figures 1–4). The female (Figures 1–2), bearing labels “MUBIO-M\0047” “Brasil, Mato Grosso do Sul, Porto Murtinho, Chaco Florestado, 96 m / 21.579°S 57.779°W / 12.xiii.2012, P.R. Souza”, is deposited in the entomological collection of the Museu de Biodiversidade, Universidade Federal da Grande Dourados, Dourados, Mato Grosso do Sul, Brazil (MuBio). The specimen was captured using pitfall traps in an area covered by humid Chaco remnants in Porto Murtinho, Brazil, which corresponds to the Chaco province (*sensu* Morrone 2014). One of the males (Figures 3 and 4), bearing labels “DZUP\300643” “Brasil, Paraná, Ponta Grossa, Pq. Estadual de Vila Velha, 980 m / 25.232°S 49.998°W, / 5.xi.2007, A. Saupe.”, is deposited in the entomological collection of the Departamento de Zoologia, Universidade Federal do Paraná, Curitiba, Paraná, Brazil (DZUP). The specimen was captured with a Malaise trap in an area of natural grasslands in the Parque Estadual de Vila Velha, in Ponta Grossa, Paraná, Brazil, comprising *Araucaria* Forest province (*sensu* Morrone 2014). The other 12 males are deposited in the entomological collection of the Universidade Federal do Espírito Santo (UFES [voucher numbers CdVM 608 to CdVM619]), and were collected with a Malaise trap in different areas in the Parque Nacional da Chapada dos Veadeiros, Goiás, Brazil, which corresponds to the Cerrado province (*sensu* Morrone 2014).





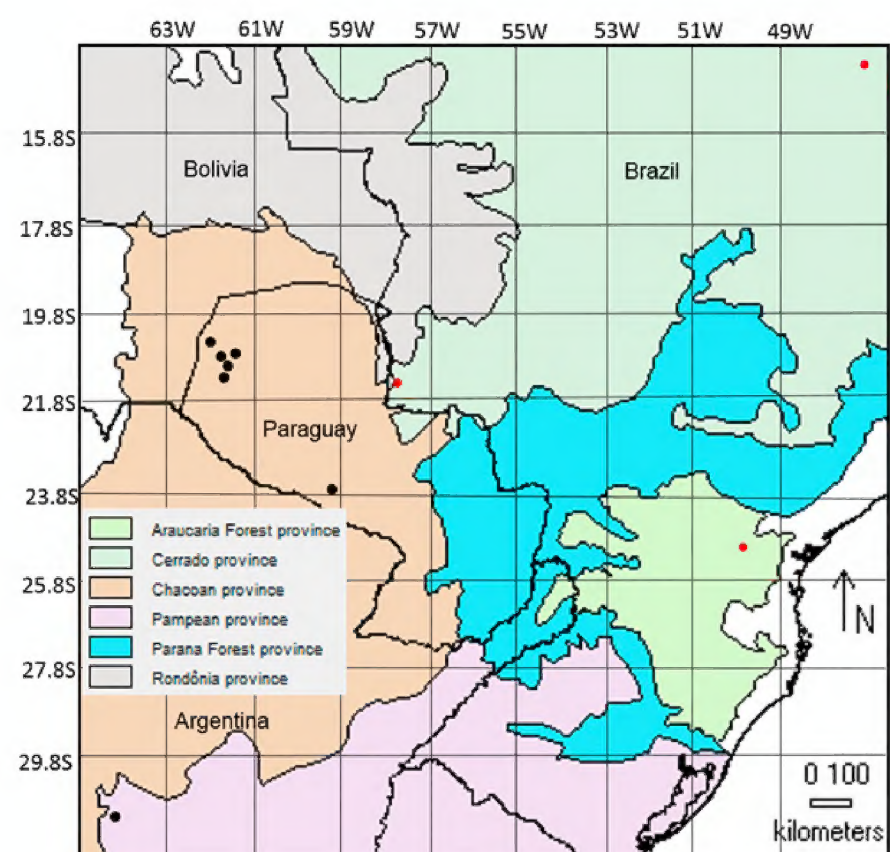
**Figures 1–4.** *Allotilla* cf. *gibbosa* Schuster, 1949. **1:** female, dorsal view; **2:** female, lateral view; **3:** male, dorsal view; **4:** male, lateral view. Scale bars: 1 mm.

Females of *A. gibbosa* are similar to *Scaptodactyla* Burmeister, 1854 and *Limaytilla* Casal, 1964 in having the antennal tubercles armed with a carina and having predominantly brown coloration. They differ from these nocturnal genera by their small eyes, in which the horizontal eye length is shorter than the genal length in lateral view (eye width greater than genal width in *Scaptodactyla* and *Limaytilla*), and in having the metasomal tergal fringes formed of sparse brachyplumose setae (tergal fringes plumose and generally dense in *Scaptodactyla* and *Limaytilla*). The males of *A. gibbosa* are similar to males of *Euspinolia* Ashmead, 1903 but can be separated from this genus by having the marginal cell shorter than the pterostigma, and by having tibial spurs white.

The Chaco province belongs to the Chacoan dominion, and comprises areas in the southern Bolivia, western Paraguay, southern Brazil and north-central Argentina. The Cerrado province also belongs to the Chacoan dominion, and comprises areas in the south-central Brazil, northeastern Paraguay and Bolivia while the Araucaria Forest province (Parana dominion) is restricted to southern Brazil and northeastern Argentina in areas between 600 and 1,800 m altitude (Morrone 2000, 2001, 2006, 2014). The occurrence of the genus *Allotilla* in Porto Murtinho (Figure 5) is expected, because other authors (e.g., Souza et al. 2010; Auko and Silvestre 2015) have reported the presence of faunal components of the Chaco province in this

locality. On the other hand, presence of *Allotilla* in the Araucaria Forest province, Parana dominion, and in the Cerrado province, Chacoan dominion, was unexpected (Quintero and Cambra 2006). The new distributional record reported here expands its known range 12 degrees eastward and six degrees northward (Figure 5).

Activity periods of the genus *Allotilla* were previously unknown, although some morphological traits of the females suggest that they spend most of their lives



**Figure 5.** Map showing the known distribution of the genus *Allotilla* Schuster, 1949, including the three new records (in red) for Brazil reported here.



underground, with hypogeal and burrowing habits, and that they are probably parasites of small ground-nesting aculeate Hymenoptera (Quintero and Cambra 2006). Male morphology indicates diurnal behavior, in that the ocelli are small and the integument is dark (Figures 3 and 4). One female *Allotilla* was observed, but not collected, crawling on a sandy trail during mid-morning in San Luis province Argentina on 20 March 2015 by KAW. This is tentative verification for the diurnal habits of *Allotilla*.

Although the genus is well-defined and we are confident that these Brazilian specimens belong in *Allotilla*, we cannot verify whether they are conspecific with *A. gibbosa* from Argentina. The holotype was unavailable for study (out on loan) when one of us (KAW) visited the Museum of Comparative Zoology in Cambridge, Massachusetts, USA. Additionally, a definitive species placement would require detailed examination of multiple characters in a large series of specimens, which is not yet possible and is beyond the scope of this paper. We hope that this present observation on Brazilian *Allotilla* will serve as a catalyst for more extensive studies in this genus by ourselves or other authors.

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**Author contributions:** THA conceived the study. All authors wrote the text. PRB, DRL, GCW and KAW identified the specimens.

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